

AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application.

LISTING OF CLAIMS:

1. (Currently Amended) A method performed by a device associated with an apparatus to report a state of the apparatus to a remote computer, ~~that cannot directly address the device~~ lacking a public network address that can be used by the remote computer to initiate communication with the device, the method comprising:

detecting the state of the apparatus, wherein detecting is performed by monitoring variables associated with the apparatus;

generating a message that reports the state of the apparatus, the message comprising a HyperText Transfer Protocol (HTTP) command, the message using eXtensible Markup Language (XML) to report the state using a self-describing computer language, and the message containing an identifier that is unique to the apparatus, wherein generating is performed periodically or in response to a deviation in the state; and

sending the message to the remote computer;

~~wherein the deviation is indicative of an error condition in the apparatus, and wherein the error condition comprises one or more variables that deviate from an acceptable value or a predetermined range of acceptable values.~~

2 to 5. (Cancelled)

6. (Previously Presented) The method of claim 1, wherein detecting the state comprises receiving the variables from the apparatus.

7. (Previously Presented) The method of claim 1, wherein detecting the state comprises retrieving the variables periodically from the apparatus.

8. (Previously Presented) The method of claim 1, wherein detecting the state comprises:
obtaining an identifier for the apparatus; and
reading the variables from the apparatus using the identifier.

9. (Previously Presented) The method of claim 1, further comprising determining the deviation.

10. (Previously Presented) The method of claim 9, wherein determining comprises comparing the state to a previous state of the apparatus.

11. (Cancelled)

12. (Original) The method of claim 1, wherein the message is generated using a predefined template, the message being generated by:
obtaining one or more variables relating to the apparatus; and

inserting the one or more variables into the template.

13 and 14. (Cancelled)

15. (Currently Amended) A method, performed by a computer, for obtaining a state of an apparatus from a device associated with the apparatus, the method comprising:

receiving, from the device, a message that reports the state of the apparatus using eXtensible Markup Language (XML) a self-describing computer language, the message comprising a HyperText Transfer Protocol (HTTP) command and containing an identifier that is unique to the apparatus, the message being received from a network that includes the device, the device lacking a public network address that can be used by the computer to initiate communication with the device ~~and that is not directly addressable by the computer,~~ the message being received periodically or in response to a deviation in the state; and

extracting the state of the apparatus and the identifier from the message;

~~wherein the deviation is indicative of an error condition in the apparatus, and wherein the error condition comprises one or more variables that deviate from an acceptable value or a predetermined range of acceptable values.~~

16 to 20. (Cancelled)

21. (Currently Amended) The method of claim 15, further comprising passing the state of the apparatus and the identifier to a customer relationship management system.

22. (Currently Amended) ~~A computer program stored on a computer-readable medium~~
One or more machine-readable media comprising instructions for use execution by a device
associated with an apparatus to report a state of the apparatus to a remote computer, ~~that cannot~~
~~directly address~~ the device lacking a public network address that can be used by the remote
computer to initiate communication with the device, ~~the computer program comprising~~
instructions ~~that cause~~ for causing the device to:

detect the state of the apparatus, wherein detecting is performed by monitoring variables
associated with the apparatus;

generate a message that reports the state of the apparatus, the message comprising a
HyperText Transfer Protocol (HTTP) command, the message using eXtensible Markup
Language (XML) to report the state using a self-describing computer language, the message
containing an identifier that is unique to the apparatus, wherein generating is performed
periodically or in response to a deviation in the state; and

send the message to the remote computer;

~~wherein the deviation is indicative of an error condition in the apparatus, and wherein the~~
~~error condition comprises one or more variables that deviate from an acceptable value or a~~
~~predetermined range of acceptable values.~~

23 to 26. (Cancelled)

27. (Currently Amended) The ~~computer program~~ one or more machine-readable media of claim 22, wherein detecting the state comprises receiving the variables from the apparatus.

28. (Currently Amended) The ~~computer program~~ one or more machine-readable media of claim 22, wherein detecting the state comprises retrieving the variables periodically from the apparatus.

29. (Currently Amended) The ~~computer program~~ one or more machine-readable media of claim 22, wherein detecting the state comprises:

obtaining an identifier for the apparatus; and
reading the variables from the apparatus using the identifier.

30. (Currently Amended) The ~~computer program~~ one or more machine-readable media of claim 22, further comprising instructions that cause the device to:
determine the deviation.

31. (Currently Amended) The ~~computer program~~ one or more machine-readable media of claim 30, wherein determining comprises comparing the state to a previous state of the apparatus.

32. (Cancelled)

33. (Currently Amended) The ~~computer program~~ one or more machine-readable media of claim 22, wherein the message is generated using a predefined template, the message being generated by:

obtaining one or more variables relating to the apparatus; and
inserting the one or more variables into the template.

34 and 35. (Cancelled)

36. (Currently Amended) ~~A computer program stored on a computer readable medium~~
One or more machine-readable media comprising instructions for use ~~execution~~ by a computer to obtain a state of an apparatus from a device associated with the apparatus, the ~~computer program~~ ~~comprising~~ instructions ~~that cause~~ for causing a processor in the computer to:

receive, from the device, a message that reports the state of the apparatus using eXtensible Markup Language (XML) ~~a self describing computer language~~, the message comprising a HyperText Transfer Protocol (HTTP) command and containing an identifier that is unique to the apparatus, the message being received from a network that includes the device, the device lacking a public network address that can be used by the computer to initiate communication with the device ~~and that is not directly addressable by the computer~~, the message being received periodically or in response to a deviation in the state; and

extract the state of the apparatus and the identifier from the message;

~~wherein the deviation is indicative of an error condition in the apparatus, and wherein the error condition comprises one or more variables that deviate from an acceptable value or a predetermined range of acceptable values.~~

37 to 41. (Cancelled)

42. (Currently Amended) The ~~computer program~~ one or more machine-readable media of claim 36, further comprising instructions that cause the processor to pass the state of the apparatus to a customer relationship management system.

43. (Currently Amended) A device associated with an apparatus for reporting a state of the apparatus to a remote computer, ~~that cannot directly address the device~~ lacking a public network address that can be used by the remote computer to initiate communication with the device, the device comprising circuitry configured to ~~which~~:

~~detects~~ detect the state of the apparatus, wherein detecting is performed by monitoring variables associated with the apparatus;

~~generates~~ generate a message that reports the state of the apparatus, the message comprising a HyperText Transfer Protocol (HTTP) command, the message using eXtensible Markup Language (XML) to report the state ~~using a self describing computer language, and the message containing an identifier that is unique to the apparatus,~~ wherein generating is performed periodically or in response to a deviation in the state; and

~~sends~~ send the message to the remote computer;

~~wherein the deviation is indicative of an error condition in the apparatus, and wherein the error condition comprises one or more variables that deviate from an acceptable value or a predetermined range of acceptable values.~~

44 to 47. (Cancelled)

48. (Previously Presented) The device of claim 43, wherein detecting the state comprises receiving the variables from the apparatus.

49. (Previously Presented) The device of claim 43, wherein detecting the state comprises retrieving the variables periodically from the apparatus.

50. (Previously Presented) The device of claim 43, wherein detecting the state comprises:

obtaining an identifier for the apparatus; and

reading the variables from the apparatus using the identifier.

51. (Currently Amended) The device of claim 43, wherein:

the circuitry ~~determines~~ is configured to determine if the state of the apparatus has changed; and

the message is generated if the state of the apparatus has changed.

52. (Previously Presented) The device of claim 51, wherein determining comprises comparing the state to a previous state of the apparatus.

53. (Cancelled)

54. (Original) The device of claim 43, wherein the message is generated using a predefined template, the message being generated by:

obtaining one or more variables relating to the apparatus; and

inserting the one or more variables into the template.

55 and 56. (Cancelled)

57. (Currently Amended) The device of claim 43, wherein the circuitry comprises a memory which stores executable instructions and a processor which executes the instructions.

58. (Original) The device of claim 43, wherein the circuitry comprises one or more of an application-specific integrated circuit and a programmable gate array.

59. (Currently Amended) A first apparatus for obtaining a state of a second apparatus from a device associated with the second apparatus, the first apparatus comprising circuitry configured to which:

receive receives, from the device, a message that reports the state of the second apparatus using eXtensible Markup Language (XML) ~~a self-describing computer language~~, the message comprising a HyperText Transfer Protocol (HTTP) command and containing an identifier that is unique to the second apparatus, the message being received from a network that includes the device, the device lacking a public network address that can be used by the first apparatus to initiate communication with the device ~~and that is not directly addressable by the first apparatus~~, the message being received periodically or in response to a deviation in the state; and

extract extracts the state of the second apparatus and the identifier from the message;
~~wherein the deviation is indicative of an error condition in the second apparatus, and wherein the error condition comprises one or more variables that deviate from an acceptable value or a predetermined range of acceptable values.~~

60 to 64. (Cancelled)

65. (Currently Amended) The first apparatus of claim 59, wherein the circuitry ~~passes~~ is configured to pass the state of the second apparatus to a customer relationship management system.

66. (Currently Amended) The first apparatus of claim 59, wherein the circuitry comprises a memory ~~which stores~~ to store executable instructions and a processor ~~which executes~~ to execute the instructions.

67. (Original) The first apparatus of claim 59, wherein the circuitry comprises one or more of an application-specific integrated circuit and a programmable gate array.

68. (Currently Amended) A system comprising:
a first device comprising circuitry ~~which generates~~ to generate a message reporting a state of an apparatus, the message comprising a HyperText Transfer Protocol (HTTP) command, the message using eXtensible Markup Language (XML) to report the state using a self-describing computer language, and the message containing an identifier that is unique to the apparatus, the first device lacking a public network address that can be used by a second device to initiate communication with the first device, wherein reporting is performed following monitoring of variables associated with the apparatus, and wherein generating is performed periodically or in response to a deviation in the state, ~~the deviation being indicative of an error condition in the apparatus and the error condition comprising one or more variables that deviate from an acceptable value or a predetermined range of acceptable values;~~ and

the second device, ~~which can communicate with the first device but which cannot directly address the first device, the second device~~ comprising circuitry ~~which receives~~ to receive the message from the first device and ~~which relays~~ to relay content from the message to an external system.

69 and 70. (Cancelled)

71. (Currently Amended) The system of claim 68, wherein the circuitry in the second device ~~extracts~~ is configured to extract the state of the apparatus from the message.

72. (Original) The system of claim 68, wherein the first device is embedded in the apparatus and the second device comprises a remote computer.

73. (Original) The method of claim 1, further comprising queuing the message prior to sending the message.

74. (Currently Amended) The ~~computer program~~ one or more machine-readable media of claim 22, further comprising instructions that cause the ~~computer~~ device to queue the message prior to sending the message.

75. (Currently Amended) The device of claim 43, wherein the circuitry is configured to queue ~~queues~~ the message prior to sending the message.

76. (Previously Presented) The system of claim 68, wherein the message includes a history log providing past states of the apparatus.

77. (Previously Presented) The method of claim 1, wherein the device is embedded in the apparatus.

78. (Previously Presented) The method of claim 15, wherein the device is embedded in the apparatus.

79. (Currently Amended) The ~~computer program~~ one or more machine-readable media of claim 22, wherein the device is embedded in the apparatus.

80. (Currently Amended) The ~~computer program~~ one or more machine-readable media of claim 36, wherein the device is embedded in the apparatus.

81. (Previously Presented) The device of claim 43, wherein the device is embedded in the apparatus.

82. (Previously Presented) The first apparatus of claim 59, wherein the device is embedded in the second apparatus.

83. (Previously Presented) The method of claim 1, wherein the message includes past states of the apparatus.

84. (Currently Amended) The ~~computer program~~ method of claim 15, wherein the message includes past states of the apparatus.

85 to 88. (Cancelled)

89. (New) A method performed by a device associated with an apparatus to report a state of the apparatus to a remote computer, the device lacking a public network address that can be used by the remote computer to initiate communication with the device, the method comprising:

detecting the state of the apparatus by monitoring variables associated with the apparatus;
generating a message that reports the state of the apparatus,

wherein the message comprises a HyperText Transfer Protocol (HTTP) command, the message uses eXtensible Markup Language (XML) to report the state, and the message distinguishes the apparatus from other like apparatuses,

wherein generating is performed periodically or in response to an error condition, and wherein generating comprises incorporating the variables into fields delimited by XML tags that correspond to the variables, and

wherein the error condition comprises one or more variables that deviate from an acceptable value or a predetermined range of acceptable values; and

sending the message to the remote computer,

wherein sending comprises sending the message once the message is generated or queuing the message and sending the message at a later time.

90. The method of claim 89, wherein monitoring comprises (a) obtaining identifiers for variables associated with the apparatus, the identifiers corresponding to storage locations for the apparatus, and (b) reading the variables from the storage locations.

91. (New) The method of claim 90, further comprising:

obtaining the XML tags using the identifiers, the XML tags being stored in a database in association with the identifiers.

92. (New) The method of claim 89, wherein the HTTP command comprises a POST command.

93. (New) The method of claim 89, wherein the message comprises one or more of the following: data identifying a type of the device, a common name for the device, a manufacturer of the device, a model name of the device, a model number of the device, a serial number of the device, and a universal unique identifier for the device.

94. (New) The method of claim 89, wherein the state comprises both an error condition and a measurement associated with the apparatus that is not an error condition.

95. (New) The method of claim 90, wherein the storage locations comprise register locations corresponding to hardware associated with the apparatus.

96. (New) The method of claim 89, wherein the message includes a history log providing past states of the apparatus.

97. (New) One or more machine-readable media comprising instructions for execution by a device associated with an apparatus to report a state of the apparatus to a remote computer, the device lacking a public network address that can be used by the remote computer to initiate communication with the device, the instructions for causing the device to:

detect the state of the apparatus by monitoring variables associated with the apparatus;
generate a message that reports the state of the apparatus,

wherein the message comprises a HyperText Transfer Protocol (HTTP) command, the message uses eXtensible Markup Language (XML) to report the state, and the message distinguishes the apparatus from other like apparatuses,

wherein generating is performed periodically or in response to an error condition, and wherein generating comprises incorporating the variables into fields delimited by XML tags that correspond to the variables, and

wherein the error condition comprises one or more variables that deviate from an acceptable value or a predetermined range of acceptable values; and
send the message to the remote computer,

wherein sending comprises sending the message once the message is generated or queuing the message and sending the message at a later time.

98. (New) The one or more machine-readable media of claim 97, wherein monitoring comprises (a) obtaining identifiers for variables associated with the apparatus, the identifiers corresponding to storage locations for the apparatus, and (b) reading the variables from the storage locations.

99. (New) The one or more machine-readable media of claim 98, further comprising instructions for causing the device to:

obtain the XML tags using the identifiers, the XML tags being stored in a database in association with the identifiers.

100. (New) The one or more machine-readable media of claim 97, wherein the HTTP command comprises a POST command.

101. (New) The one or more machine-readable media of claim 97, wherein the message comprises one or more of the following: data identifying a type of the device, a common name for the device, a manufacturer of the device, a model name of the device, a model number of the device, a serial number of the device, and a universal unique identifier for the device.

102. (New) The one or more machine-readable media of claim 97, wherein the state comprises both an error condition and a measurement associated with the apparatus that is not an error condition.

103. (New) The one or more machine-readable media of claim 98, wherein the storage locations comprise register locations corresponding to hardware associated with the apparatus.

104. (New) The one or more machine-readable media of claim 97, wherein the message includes a history log providing past states of the apparatus.

105. (New) A device configured to report a state of an apparatus to a remote computer, the device lacking a public network address that can be used by the remote computer to initiate communication with the device, the device comprising circuitry configured to:

detect the state of the apparatus by monitoring variables associated with the apparatus;
generate a message that reports the state of the apparatus,

wherein the message comprises a HyperText Transfer Protocol (HTTP) command, the message uses eXtensible Markup Language (XML) to report the state, and the message distinguishes the apparatus from other like apparatuses,

wherein generating is performed periodically or in response to an error condition, and wherein generating comprises incorporating the variables into fields delimited by XML tags that correspond to the variables, and

wherein the error condition comprises one or more variables that deviate from an acceptable value or a predetermined range of acceptable values; and send the message to the remote computer,

wherein sending comprises sending the message once the message is generated or queuing the message and sending the message at a later time.

106. (New) The device of claim 105, wherein monitoring comprises (a) obtaining identifiers for variables associated with the apparatus, the identifiers corresponding to storage locations for the apparatus, and (b) reading the variables from the storage locations.

107. (New) The device of claim 106, wherein the circuitry is configured to: obtain the XML tags using the identifiers, the XML tags being stored in a database in association with the identifiers.

108. (New) The device of claim 105, wherein the HTTP command comprises a POST command.

109. (New) The device of claim 105, wherein the message comprises one or more of the following: data identifying a type of the device, a common name for the device, a manufacturer of the device, a model name of the device, a model number of the device, a serial number of the device, and a universal unique identifier for the device.

110. (New) The device of claim 105, wherein the state comprises both an error condition and a measurement associated with the apparatus that is not an error condition.

111. (New) The device of claim 106, wherein the storage locations comprise register locations corresponding to hardware associated with the apparatus.

112. (New) The device of claim 105, wherein the message includes a history log providing past states of the apparatus.

113. (New) The device of claim 105, wherein the circuitry comprises one or more of: a processing device and memory, an application-specific integrated circuit, and a programmable gate array.

114. (New) A system comprising:
a first device having access to a public network;
a second device configured to report a state of an apparatus to the first device; and
a firewall between the first device and the second device, wherein the second device lacks a public network address that can be used by the first device to initiate communication with the second device;

wherein the second device comprises circuitry configured to:

detect the state of the apparatus,

wherein detecting comprises monitoring variables associated with the apparatus, wherein monitoring comprises (a) obtaining identifiers for variables associated with the apparatus, the identifiers corresponding to storage locations for the apparatus, and (b) reading the variables from the storage locations; generate a message that reports the state of the apparatus,

wherein the message comprises a HyperText Transfer Protocol (HTTP) command, the message uses eXtensible Markup Language (XML) to report the state, and the message distinguishes the apparatus from other like apparatuses,

wherein generating is performed periodically or in response to an error condition, and wherein generating comprises incorporating the variables into fields delimited by XML tags that correspond to the variables, and

wherein the error condition comprises one or more variables that deviate from an acceptable value or a predetermined range of acceptable values; and send the message to the first device,

wherein sending comprises sending the message once the message is generated or queuing the message and sending the message at a later time; and wherein the first device comprises circuitry configured to:

receive the message from the second device;

extract the state of the apparatus from the message by parsing the XML; and

pass the state to a computer program.